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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/912,604	07/24/2001	Robert Brooks JR.	1662-36300 JMH (P00-3509)	7189

22879 7590 08/24/2005

HEWLETT PACKARD COMPANY
P O BOX 272400, 3404 E. HARMONY ROAD
INTELLECTUAL PROPERTY ADMINISTRATION
FORT COLLINS, CO 80527-2400

EXAMINER	
FLANDERS, ANDREW C	

ART UNIT	PAPER NUMBER
2644	

DATE MAILED: 08/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/912,604	BROOKS ET AL.	
	Examiner	Art Unit	
	Andrew C. Flanders	2644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 July 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11, 15-20* is/are rejected.

7)☒ Claim(s) *12-14* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Allowable Subject Matter

The indicated allowability of claims 10 – 11 and 16 - 20 are withdrawn in view of the newly discovered reference(s) to Applicant's admitted prior art. Rejections based on the newly cited reference(s) follow.

Claims 12 – 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1 - 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dell (Optiplex GX1p Installation guide) in view of Sound Blaster (Sound Blaster Live! Player 5.1 User Guide) and in further view of Baker (U.S. Patent 6,185,627) and in further view of Voltz (U.S. Patent 6,859,538).

Regarding **Claim 1**, Dell discloses:

A computer system (entire document), comprising:

a processor (i.e. an Intel Pentium II microprocessor; page 1-1);

a system memory coupled to said processor (i.e. up to 384 MB of system memory; page 1-2);

an internal audio speaker device (i.e. a speaker; page 2-18).

Dell does not explicitly disclose an audio controller circuit that determines which of a plurality of connectors, if any, have external playback devices coupled thereto, determines whether at least one such coupled external playback device comprises a digital or analog external playback device, and, based on such determinations, selectively transmits analog audio signals to the internal audio speaker and selectively transmits at least one of an analog audio signal, a digital audio signal, and a mute signal to output circuitry associated with each of said connectors.

Baker discloses:

an audio controller circuit that determines whether at least one such coupled external playback device comprises a digital or an analog external playback device (Fig. 10),

and selectively transmits at least one of an analog audio signal, a digital audio signal, and a mute signal to output circuitry associated with each of said connectors (Fig. 10 elements 1016 and 1018).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Dell's computer system with the audio controller circuit disclosed by Baker. One would have been motivated to do so in order to prevent loss in fidelity of

the digital signals when digital speakers are attached to Dell's computer system; see Baker col. 4 lines 63 – 67.

The combination of Dell in view of Baker fails to disclose the audio controller circuit that determines which of a plurality of connectors, if any, have external playback devices coupled thereto or based on such determinations, selectively transmits analog audio signals to the internal audio speaker.

Sound Blaster discloses a sound card that transmits sound to multiple output connectors (page 1-4). Sound Blaster does not explicitly disclose selectively transmitting analog audio signals to the internal audio speaker based upon such determinations. However, it would have been obvious to one of ordinary skill in the art at the time of the invention to selectively control the internal speaker disclosed by Dell. One would have been motivated to use the Sound Blaster card in place of Dell's disclosed onboard audio controller that controls the internal speakers (page 1-4 in Dell) in order to allow the computer to transmit a higher quality of sound. Furthermore it is notoriously well known that the PCI slots in Dell's system (page 3-1) are capable of, and are meant for adding expansion cards such as the sound blaster card. Thus the combination would allow the sound card to control the internal speaker and would read upon the limitation of selectively transmitting analog audio signals to the internal audio speaker based upon such determinations.

Further, the combination of Dell in view of Baker in view of Sound Blaster fails to disclose the audio controller circuit that determines which of a plurality of connectors, if any, have external playback devices coupled thereto.

Voltz discloses:

an audio controller circuit that determines which of a plurality of connectors, if any, have external playback devices coupled thereto (i.e. the processing unit may poll the audio interface to determine if the speakers are coupled to the audio interface; col. 4 lines 10 – 20).

It would have been obvious to one of ordinary skill in the art to modify the audio card in the combination of Dell in view of Baker in view of Sound Blaster to determine if speakers are attached as disclosed by Voltz. One would have been motivated to do so in order to create a plug and play system where a user would not be required to complete a difficult installation and configuration of a speaker system to allow the computer to detect the speakers.

Regarding **Claim 2**, in addition to the elements stated above regarding claim 1, the combination of Dell in view of Baker in further view of Sound Blaster and in further view of Voltz further discloses:

audible sounds are transmitted to and reproduced by one playback device at a time (i.e. switching between a digital mode or an analog mode; page 1-4 and 3-4 in Sound Blaster); and

wherein the audio controller circuit determines whether said at least one such device comprises an analog or a digital external playback device for the purpose of transmitting corresponding analog or digital audio signals (Fig. 10 in Baker).

Claims 3 – 11 and 15 - 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dell (Optiplex GX1p Installation guide) in view of Sound Blaster (Sound Blaster Live! Player 5.1 User Guide) and in further view of Baker (U.S. Patent 6,185,627) and in further view of Voltz (U.S. Patent 6,859,538) and in further view of Live! IR (Live! Drive IR Quick Start).

Regarding **Claim 3**, in addition to the elements stated above regarding claim 1, the combination of Dell in view of Baker in further view of Sound Blaster and in further view of Voltz further discloses:

a rear audio connector (i.e. a line out; page 1-4 in Sound Blaster); and

wherein audio signals are transmitted by the audio controller circuit for playback by one of either the internal speaker device or a playback device coupled to the rear connector or a playback device coupled to the front audio connector (i.e. the line out in Sound Blaster transmits audio to various device; Page 1-4).

The combination fails to disclose a front audio connector.

Live! IR discloses a front audio connector (i.e. multiple outputs via a front panel; pages 1 and 3).

It would have been obvious to one of ordinary skill in the art at the time of the invention to add Live! Drive IR to the combination's Sound Blaster audio card. It is one of the many peripherals that are commonly available and suited to easily and quickly

attach to the Sound Blaster card. One would have been motivated to add this to create easy access to audio and other various outputs.

Regarding **Claim 4**, in addition to the elements stated above regarding claim 3, the combination of Dell in view of Baker in further view of Sound Blaster and in further view of Voltz further discloses:

Live! IR discloses setting the system to mute all outputs when a headphone is connected (page 14) (i.e. when playback devices coupled to the front connector have playback priority over playback devices coupled to the rear connector and the internal speaker device). Live! IR does not explicitly disclose that the rear connector has playback priority over the internal speaker device. However, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the sound card as disclosed by Sound Blaster in order to mute the internal speaker when rear audio inputs are attached (i.e. playback devices coupled to the rear connector have playback priority over the internal speaker device). It is well known in the art that many PC systems come with an integrated internal speaker along with a set of desktop speakers. Due to their proximity and the usually low quality of the internal speaker, it would have been obvious to one of ordinary skill in the art at the time of the invention to mute the internal speaker when rear outputs are attached in order to prevent poor sound quality such as reverberation, reflection and any other problems associated with multiple speaker systems and the poor quality of the internal speaker.

Regarding **Claim 5**, in addition to the elements stated above regarding claim 4, the combination of Dell in view of Baker in further view of Sound Blaster and in further view of Voltz further discloses:

the Baker art discloses a sound card that detects the type of speaker system attached and sends analog or digital signals accordingly (Fig. 10) (i.e. wherein the audio controller circuit determines whether each devices is analog or digital for the purpose of transmitting corresponding analog or digital signals to each device). The nature of the combination is such that the sound card performs all of the audio processing. As such when devices are connected to either the front or rear connects a determination is made to whether the sources are analog or digital and audio is output accordingly (i.e. wherein the audio controller circuit determines whether to transmit analog or digital signals under the following conditions: a) when a playback device is coupled to or removed from the front connector', and b) when no playback device is coupled to the front connector and a playback device is coupled to or removed from the rear connector).

Regarding **Claim 6 and 8**, in addition to the elements stated above regarding claims 5 and 7, the combination of Dell in view of Baker in further view of Sound Blaster and in further view of Voltz further discloses:

Sound Blaster does not explicitly disclose using the sound card to control the internal speaker disclosed bye Dell. However, it would have been obvious to one of ordinary skill in the art at the time of the invention to use Sound Blasters audio card to control this speaker. Dell discloses an onboard audio controller that controls this

speaker and it using Sound Blasters audio card would have been obvious due to the similarities in the hardware. Moreover, if no devices were connected to the front or rear outputs, it would be obvious by default to use the internal PC speaker to transmit audio (i.e. if no external playback device is coupled to the computer system, the audio controller circuit transmits analog audio signals for playback by the internal speaker device).

Regarding **Claim 7**,

Dell discloses:

A programmable logic device (i.e. an Intel Pentium II microprocessor; page 1-1).

Dell fails to disclose the remaining elements of claim 7.

Sound Blaster discloses:

a digital audio controller that generates digital audio signals reproducible by a digital audio device (i.e. an audio card that outputs analog and digital streams; pages 1-2);

a mixed signal codec that communicates with the digital audio controller and generates analog signals reproducible by an analog audio device (i.e. an analog mode; page 1-4; for connecting the output of the sound card to an analog 5.1 channel speaker system; page 1-6);

a plurality of audio output connectors, each configured to accept a mating connector coupled to an external audio device (i.e. multiple audio outputs; page 1-4).

The combination of Dell in view of Sound Blaster fails to disclose a switching circuitry that transmits digital audio signals to a selected output connector depending on a state of a mute signal; and

wherein the audio controller circuit detects whether an external audio device coupled to an output connector is an analog or digital device and transmit either analog or digital audio signals to any of the output connectors.

Live Drive IR! Discloses a switching circuitry that transmits digital audio signals to a selected output connector depending on a state of a mute signal (setting the system to mute all outputs when a headphone is connected; page 14)

It would have been obvious to one of ordinary skill in the art at the time of the invention to add Live! Drive IR to the combination's Sound Blaster audio card. It is one of the many peripherals that are commonly available and suited to easily and quickly attach to the Sound Blaster card. One would have been motivated to add this to create easy access to audio and other various outputs.

The combination of Dell in view of Sound Blaster and in further view of Live Drive IR! Fails to disclose wherein the audio controller circuit detects whether an external audio device coupled to an output connector is an analog or digital device and transmit either analog or digital audio signals to any of the output connectors.

Baker discloses wherein the audio controller circuit detects whether an external audio device coupled to an output connector is an analog or digital device and transmit either analog or digital audio signals to any of the output connectors (Fig. 10).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combination with the audio controller circuit disclosed by Baker. One would have been motivated to do so in order to prevent loss in fidelity of the digital signals when digital speakers are attached to combination's system; see Baker col. 4 lines 63 – 67.

Regarding **Claim 9**, in addition to the elements stated above regarding claim 8, the combination of Dell in view of Baker in further view of Sound Blaster and in further view of Voltz further discloses:

Sound Blaster discloses a Line out which transmits audio to various devices (page 1-4) (i.e. a rear audio connector).

Sound Blaster does not disclose a front audio connector and wherein if the front output connector is coupled to an external audio device, the audio control circuit: asserts a first mute signal to mute the rear output connector; and asserts a second mute signal to mute the internal analog output; and wherein if the front output connector is not coupled to an external audio device and the rear output connector is coupled to an external audio device, the audio controller circuit: asserts the second mute signal to mute the internal analog output.

Live! IR discloses multiple outputs via a front panel (pages 1 and 3) (i.e. a front audio connector), setting the system to mute all outputs when a headphone is connected (page 14) (i.e. wherein if the front output connector is coupled to an external audio device, the audio controller circuit: asserts a first mute signal to mute the rear

output connector; and asserts a second mute signal to mute the internal analog output). It would have been obvious to one of ordinary skill in the art at the time of the invention to add Live! Drive IR to Sound Blaster's sound card. It is merely one of a variety of peripherals that can be attached.

Sound Blaster shows a connection to the Live! Drive IR on page 1-4. Live! IR does not explicitly wherein if the front output connector is not coupled to an external audio device and the rear output connector is coupled to an external audio device, the audio controller circuit: asserts the second mute signal to mute the internal analog output. However, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the sound card as disclosed by Sound Blaster in order to mute the internal speaker when rear audio inputs are attached (i.e. wherein if the front output connector is not coupled to an external audio device and the rear output connector is coupled to an external audio device, the audio controller circuit: asserts the second mute signal to mute the internal analog output). It is well known in the art that many PC systems come with an integrated internal speaker along with a set of desktop speakers. Due to their proximity and the usually low quality of the internal speaker, it would have been obvious to one of ordinary skill in the art at the time of the invention to mute the internal speaker when rear outputs are attached in order to prevent poor sound quality such as reverberation, reflection and any other problems associated with multiple speaker systems and the poor quality of the internal speaker.

Regarding **Claim 10**, in addition to the elements stated above regarding claim 9, the combination of Dell in view of Baker in further view of Sound Blaster and in further view of Voltz further discloses:

Wherein the switching circuit further comprises a digital output switch that:

Transmits digital audio signals to the rear output connector when the first mute signal is de-asserted (setting the system to mute all outputs when a headphone is connected (page 14) in Live Drive IR, when the headphones are removed it is inherent the that mute signal is de-asserted and then a digital output is output to the other connectors, in this case the rear connectors).

The combination fails to explicitly disclose transmitting digital audio signals to the front output connector when the first mute signal is asserted.

However, it would have been obvious to one of ordinary skill in the art to adapt the combination to use a digital headphone set instead of the analog set disclose. By doing so, when the digital set was plugged in, the other outputs would be muted and this would read upon the limitation of transmitting digital audio signals to the front output connector when the first mute signal is asserted. One would have been motivated to do so in order to have a higher quality of audio play back that is normally associated with digital audio signals as opposed to analog.

Regarding **Claim 11**, in addition to the elements stated above regarding claim 9, the combination of Dell in view of Baker in further view of Sound Blaster and in further view of Voltz further discloses:

Wherein the switching circuit further comprises analog output muter that uses the first and second mute signals to selectable mute or transmit analog signals to outputs such that:

If the first mute signal is asserted, the muter does not transmit analog signals to the rear output connector (i.e. if the analog headphones are connected all other outputs are muted; Live Drive IR); and

If the second mute signal is asserted, the muter does not transmit analog audio signals to the internal analog output (i.e. It is well known in the art that many PC systems come with an integrated internal speaker along with a set of desktop speakers. Due to their proximity and the usually low quality of the internal speaker, it would have been obvious to one of ordinary skill in the art at the time of the invention to mute the internal speaker when rear outputs are attached in order to prevent poor sound quality such as reverberation, reflection and any other problems associated with multiple speaker systems and the poor quality of the internal speaker).

Regarding **Claim 15,** the combination of Dell in view of Baker in further view of Sound Blaster and in further view of Voltz disclosed above regarding claims 1 and 7 further discloses:

Live! Drive IR discloses muting all of the other sources when headphones are attached (page 14) (i.e. ranking the audio outputs in terms of playback priority, transmitting audio signals from an audio controller circuit to the highest priority audio

output to which an audio device is coupled and wherein if a playback device is removed from the audio output to which audio signals are currently being transmitted).

It is obvious that if a secondary output is being used, when the headphones are instead, the secondary output will be shut off (i.e. if a playback device is plugged into a higher priority output).

Baker discloses transmitting the appropriate analog or digital audio signals to an output (Fig. 10).

The combination fails to disclose detecting whether a transmitted analog test tone is grounded by the output device to determine whether the audio device coupled to the highest priority audio output comprises a digital or an analog device.

However, as shown in applicant's disclosure regarding Figs. 1A and 1B which are admitted prior art, on page 4 applicant discloses in Fig. 1B when a test tone is transmitted, the test tone will be attenuated because the channel is grounded when digital speakers are attached. As such, this reads upon the limitation of detecting whether a transmitted analog test tone is grounded by the output device to determine whether the audio device coupled to the highest priority audio output comprises a digital or analog device.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combination as taught by Applicant's admitted prior art to facilitate in determine whether digital or analog speakers are attached. One would have been motivated to do so in order to quickly determine the type of speakers attached.

Regarding **Claim 16**, in addition to the elements stated above regarding claim 15, the prior art referenced does not explicitly disclose generating an interrupt to indicate to the computer system that a device type must be determined. However, Dell teaches of setting interrupts for various computer devices (page 3-9 and 3-10).

It would have been obvious to one of ordinary skill in the ad at the time of the invention to use interrupts to inform the computer to determine which device is connected. One would have been motivated to use interrupts due to their ease of use and the availability in commonly available computer systems.

Regarding **Claim 17**, in addition to the elements stated above regarding claim 16, the combination of Dell in view of Baker in further view of Sound Blaster and in further view of Voltz and in father view of Applicant's admitted prior art further discloses:

transmitting an analog test-tone to the highest priority output device (i.e. page 4 paragraph 10 in Applicants disclosure).

Regarding **Claim 18**, in addition to the elements stated above regarding claim 15, the combination of Dell in view of Baker in further view of Sound Blaster and in further view of Voltz and in further view of Applicant's admitted prior art further discloses:

Wherein the test tone is transmitted to the right channel of a stereo output device (i.e. the test tone is transmitted on the right channel, paragraph 9 on page 4 in Applicant's disclosure).

Regarding **Claim 19**, in addition to the elements stated above regarding claim 15, the combination of Dell in view of Baker in further view of Sound Blaster and in further view of Voltz and in further view of Applicant's admitted prior art further discloses:

Wherein the audio signals and test tone are directed to and from the highest priority output device using switches (Fig. 1A and 1B in Applicant's Drawings show a switch attached to the Right terminal and ground which the test tone is transmitted over).

Regarding **Claim 20**, in addition to the elements stated above regarding claim 15, the combination of Dell in view of Baker in further view of Sound Blaster and in further view of Voltz and in further view of Applicant's admitted prior art fails to disclose the limitations of claim 20.

However, the duration of the interrupt, in this case, 500 microseconds is a design choice by applicant. The duration of the interrupt does not provide any new and useful result over the interrupts commonly available within a PC such as the Dell PC in the prior art. Dell's interrupts generated by the CPU are capable of producing an interrupt with a duration of 500 microseconds. As such the claim is rejected.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew C. Flanders whose telephone number is (571) 272-7516. The examiner can normally be reached on M-F 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on (571) 272-7848. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

acf

VIVIAN CHIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600